E. G. BUDD.

FRAME.

APPLICATION FILED AUG. 9, 1906.

929,283.

Patented July 27, 1909.

2 SHEETS—SHEET 1.

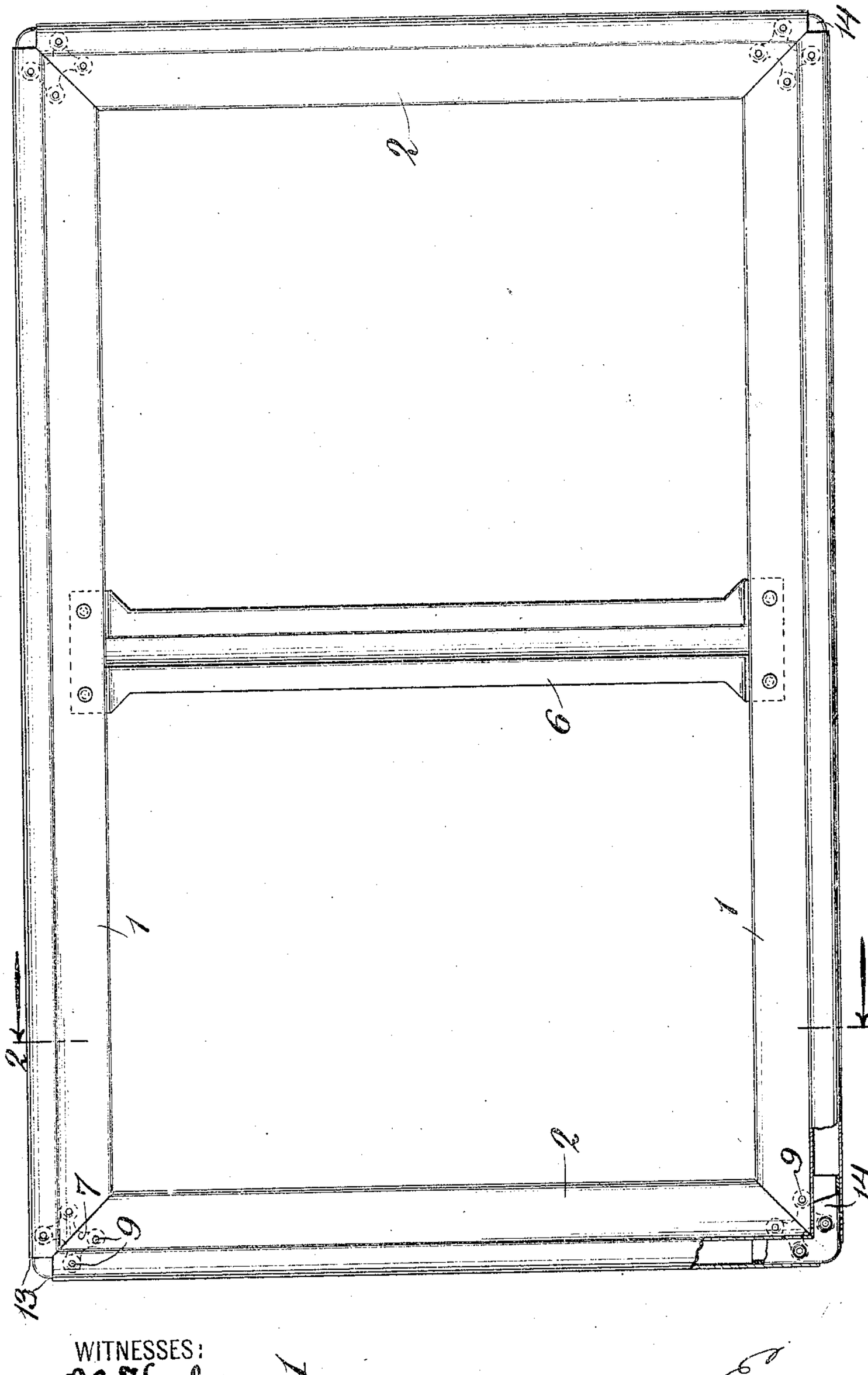

Fig. 1.

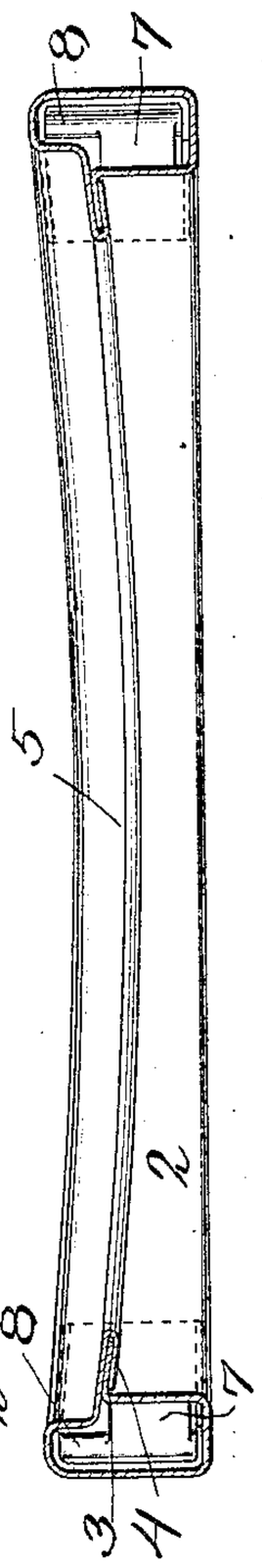

Fig. 2.

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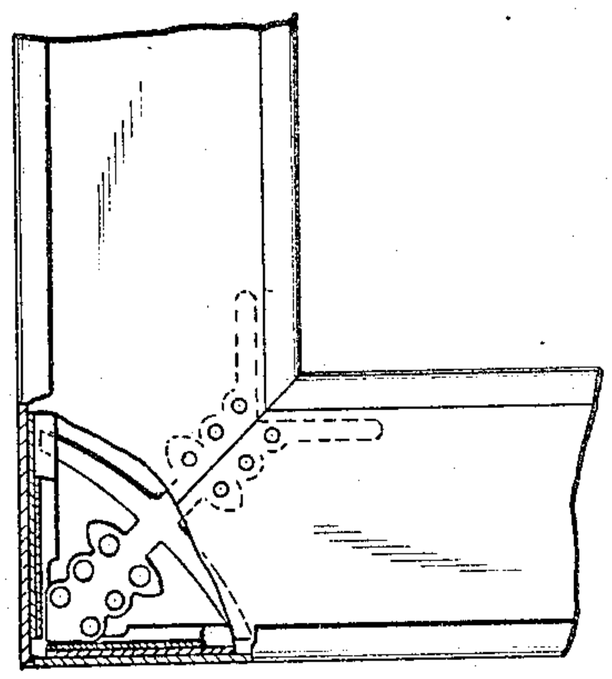

Fig. 6.

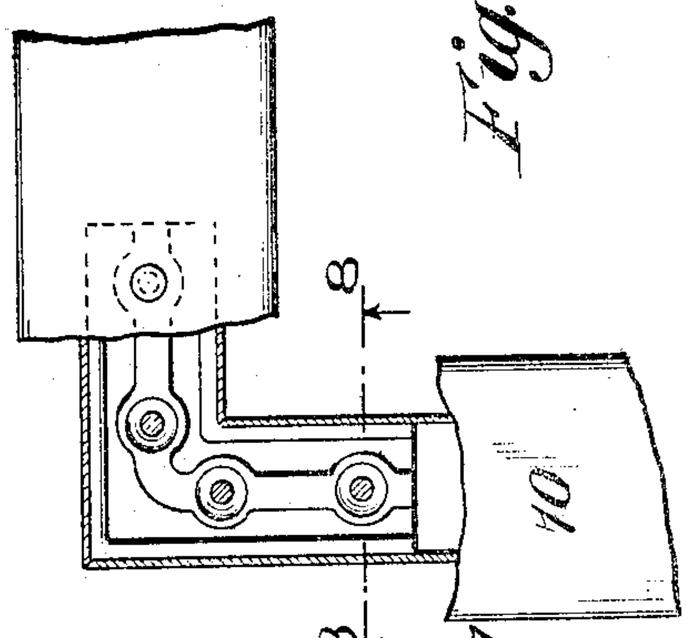

Fig. 7.

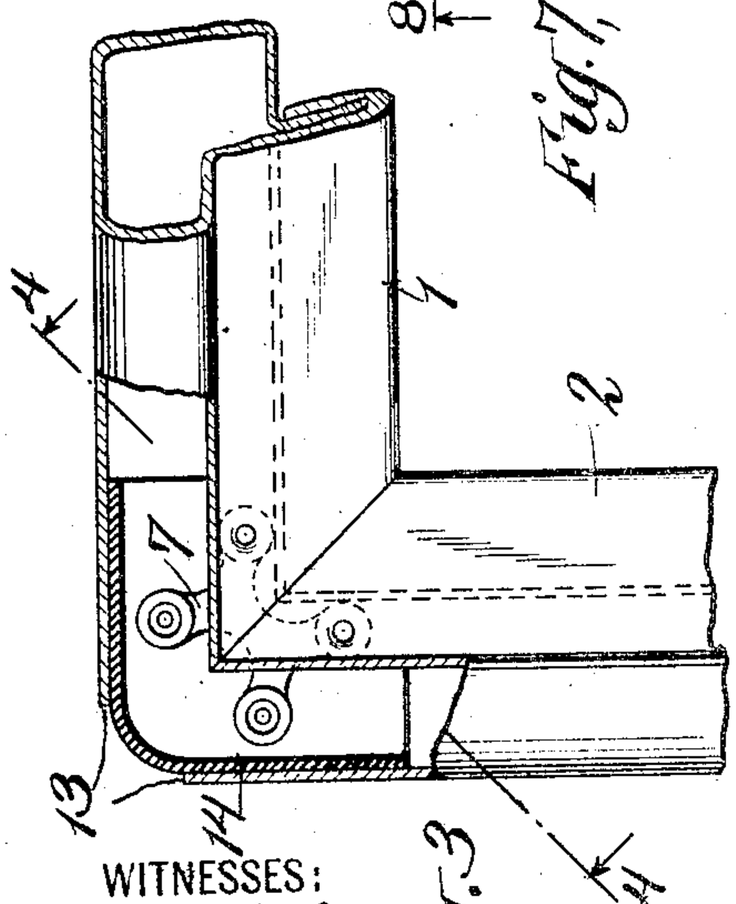

Fig. 3.

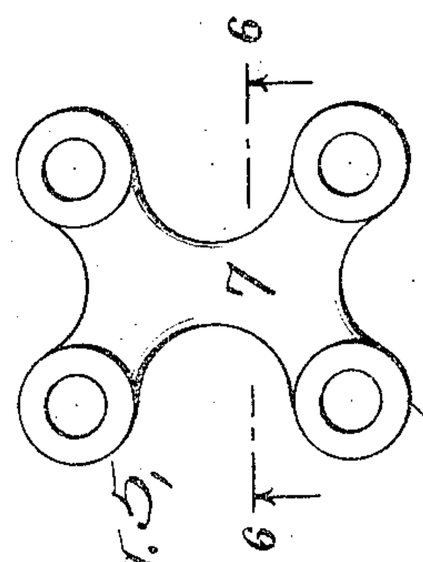

Fig. 5.

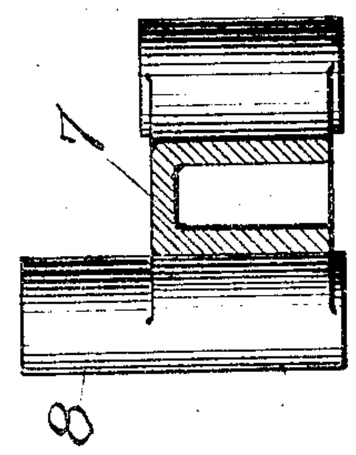

Fig. 6.

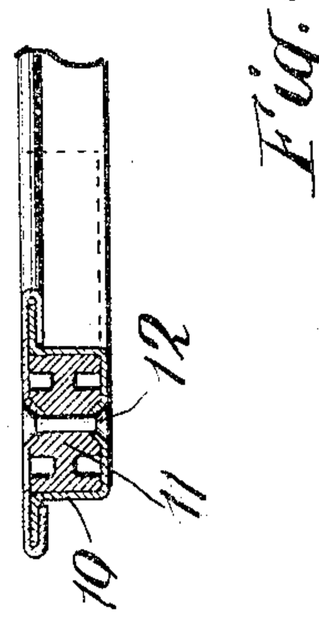

Fig. 8.

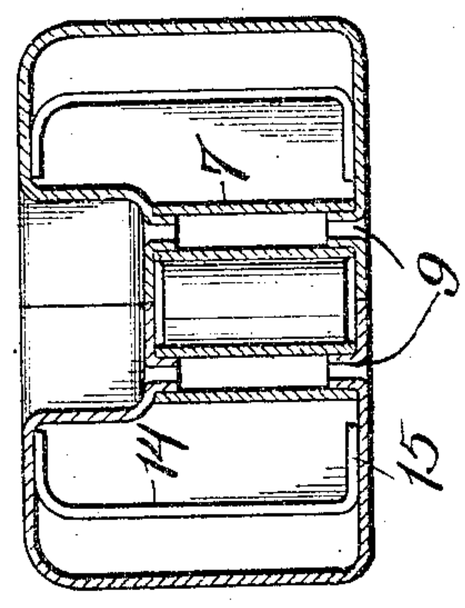

Fig. 4.

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UNITED STATES PATENT OFFICE.

EDWARD G. BUDD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HALE-KILBURN METAL COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

FRAME.

No. 929,283. Specification of Letters Patent. Patented July 27, 1909.

Application filed August 9, 1906. Serial No. 329,591.

To all whom it may concern:

Be it known that I, EDWARD G. BUDD, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Frames, of which the following is a specification.

The object of the invention is to provide an improved metallic frame so constructed that it possesses great strength and can be manufactured at comparatively small cost.

The features of my invention are of particular utility in frames for cushions such as are used in railway car-seats, but I wish it understood that they are in no way limited in this respect.

My improved frame is preferably of rectangular shape and consists of a plurality of frame-sections secured together at their ends; each section is formed of sheet-metal pressed to the desired form and having open space between the sides thereof and flanges at the edges to facilitate securing them together. These flanges are arranged to provide a flange on the section extending inwardly of the frame to which the ends of cross-slats for strengthening the frame as a whole may be secured. When the frame is used in the construction of a cushion, this flange is peculiarly formed to assist in giving the desired shape to the surface of the cushion. At the corners of the frame, the frame-sections are secured together by means of separators extending into the abutting ends of the sections and having a plurality of openings into which the material of the sections may be driven to secure them thereto. Also, the frame-sections are cut away somewhat at the corners and curved corner-pieces are secured to adjacent sections to round the corners of the frame.

My invention will be better understood by reference to the accompanying drawings, which show an embodiment thereof and in which—

Figure 1 is a top view of the frame broken away in part, Fig. 2 is a section on line 2—2 of Fig. 1, Fig. 3 is an enlarged view of one of the corners broken away in part, Fig. 4 is a section on line 4—4 of Fig. 3, Fig. 5 is a top view of the separator, Fig. 6 is a section on line 6—6 of Fig. 5, Fig. 7 is a view similar to Fig. 3 showing a modified form of corner construction, Fig. 8 is a section on line 8—8 of Fig. 7, and Fig. 9 is a view of a further modification of the corner construction.

Referring first to Fig. 1 of the drawings, the frame is of rectangular form and consists of two side and two end frame-sections, 1 and 2 respectively secured together at their ends. Each frame-section is formed of one or more members of sheet-metal pressed to the proper shape to provide open space between opposite sides thereof.

In Figs. 1 to 4, each frame-section is shown as formed of a single piece of sheet-metal one edge of which is provided with a flange 3 and the other a fold 4 inclosing the flange 3 whereby the edges of the section are secured together. The flange 3 and fold 4 are so formed as to constitute a flange extending inwardly of the frame when the several sections are secured together, and if the frame is to be used for a cushion, the inwardly extending flanges on the side members 1 are inclined with reference to the plane of the frame so that the inner edges are lower than the outer edges. The flange on each of the end-members is curved longitudinally thereof on an arc of large radius as shown at 5, Fig. 2, the extreme ends thereof being on substantially the same level and inclination as the flanges on the side-members 1. The upper surfaces of the end-members 2 are preferably curved longitudinally in substantially the same manner as the flanges thereon as shown in Fig. 2. A brace 6 extends across between opposite side-members 1 and is secured at its ends to the flanges thereon; this brace is channeled, as shown, to give it greater strength.

In securing the frame-sections together the ends thereof are brought together over a separator which extends into the abutting ends of the two sections to assist in preventing collapse thereof; this separator is provided with a plurality of openings and the material of each section is driven into the openings in the separator on one side of the center line thereof.

In Figs. 1 to 6, is shown a form of separator consisting of a web 7 uniting a plurality of tubular members 8. As the frame illustrated is of greater depth at one portion thereof than another, some of these tubular members 8 are longer than others.

In assembling the frame, two sections thereof are brought together with their beveled ends alining and half of the separator lying within each of the sections, as shown, and the material of the sections is sunk into the openings in the separator as shown at 9, Fig. 4. This holds the sections together firmly and makes a neat joint between them.

In Figs. 7 and 8, a frame 10 of different shape is shown and the casting 11 for the separator is of such size as to completely fill the ends of the frame-sections. This assists further in preventing collapse of the sections and unites them by a strong neat joint in the manner above described. If desired, rivets 12 may be inserted in the openings in the separator, the ends of which may be countersunk, to hold the metal of the frame-sections in the openings more tightly.

In Fig. 9 a further modification of the form of the separator is shown having parts extending well into the ends of the frame-sections and provided with a plurality of openings into which the material of the sections is driven.

In order to provide rounded corners for the frame, the extreme ends of the several frame-sections are cut away, as indicated at 13, and corner-pieces 14 are inserted and secured in position at the corners. Each of these corner-pieces is a piece of sheet-metal bent to a right angle on a curve with a radius depending on the amount of metal cut away at the ends of the frame-sections and flanged inwardly at its upper and lower edges as shown at 15. In assembling the parts of the frame, the corner-piece 14 is inserted in the ends of abutting sections and secured, as by brazing or riveting, in position with the curved bend therein filling the opening between the outer edges of the frame-sections and the ends thereof.

The frame shown in Figs. 1 and 2 is particularly well adapted for use in the construction of a seat-cushion for a car-seat. Thus, a plurality of wooden slats may be secured upon the inwardly-extending flanges on the frame-members. These may extend lengthwise of the frame and be seecured at their ends to the flanges on the sections 2, in which case the surfaces thereof will be arranged on a curve substantially the same as that of the flanges on the end sections. The increased thickness of the frame-sections at the outer edge provides a smooth rounded edge for the seat, the upper surface of which is flush with that of the slats. If desired, the slats may be curved longitudinally, and secured at their ends to the side members 1. Instead of wooden slats, sheet-metal ones may be employed, in which case the outer edges of the frame-sections would extend up only a very short distance above the flanges.

Having now described my invention, what I claim as new therein and desire to secure by Letters Patent is as follows:—

1. A rectangular metallic cushion-frame comprising side and end members secured together at their ends and each formed of sheet-metal pressed to a substantially rectangular cross-section and to form a flange extending inwardly of the frame, the upper surfaces of the side members and the flanges thereon being straight and the upper surfaces of the end members and the flanges thereon being curved in the direction of their length, the flanges on the side members being inclined downwardly of the frame and each of said flanges being below the upper surface of the member on which it is formed so that the surface material of the cushion supported on said flanges shall be substantially flush with the upper surfaces of the members, substantially as described.

2. In a frame, two hollow metallic frame sections having beveled abutting ends, said beveled portions being cut away at the outer ends thereof, a member extending into said sections at the ends thereof, the ends of said sections being secured to said member, and a rounded corner-piece extending within the ends of said sections and secured thereto to form a rounded outer surface on the frame at the joint between said sections and between the cut-away portions of said ends, substantially as set forth.

3. In a frame, two hollow metallic frame sections having beveled abutting ends, said beveled portions being cut away at the outer ends thereof, a separator having a plurality of openings therein extending into said sections at the ends thereof, the material of said sections being driven into the openings in said separator to secure said sections together, and a rounded cornerpiece extending within the ends of said sections and secured thereto to form a rounded outer surface on the frame at the joint between said sections and between the cut-away portions of said ends, substantially as set forth.

4. A rectangular metallic cushion-frame, comprising side and end members each formed of sheet-metal pressed to a substantially rectangular cross-section and to form a flange extending inwardly of the frame, certain of the adjacent members of said frame having beveled abutting ends and said beveled portions being cut away at the outer ends thereof, and a rounded cornerpiece extending within the ends of said sections and secured thereto to form a rounded outer surface on the frame at the joint between said sections and between the cut-away portions of said ends, substantially as set forth.

5. In a frame, two hollow metallic frame members having beveled abutting ends and said beveled portions being cut away at the

outer ends thereof, and means for securing the ends of said members together one at an angle to the other and for forming a rounded corner at the junction of the members, said means extending into the ends of the hollow members and having openings into which the material of the members is driven, substantially as described.

6. In a frame, two hollow metallic frame-members having beveled abutting ends and said beveled portions being cut away at the outer ends thereof, and means for securing the ends of said members together one at an angle to the other and for forming a rounded corner at the junction of the members, said means extending into the ends of the hollow members and having the latter secured thereto, substantially as described.

This specification signed and witnessed this 31st day of July, 1906.

EDWARD G. BUDD.

Witnesses:
M. GETZ,
P. I. TUCKER.